Remarks

The present response is to the Office Action mailed in the above referenced case on May 11, 2005, made final. Claims 8-10, 13 and 14 are presented below for examination. The Examiner rejects claims 8 and 13 under 35 U.S.C 112, first paragraph. Claims 8-10, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Liebowitz et al. (U.S. 5,812,545), hereinafter Liebowitz. The Examiner has further rejected 8-10, 13 and 14 under 35 U.S.C. 103(a) as being unpatentable over Yong of record, and further in view of Clark et al. (U.S. 5,864,747), after Clark.

Applicant has again carefully studied the prior art, and the Examiner's objections, rejections and statements of the instant Office Action. In response, applicant slightly amends the language of the base claims to more clearly recite the subject matter regarded as patentable, and to overcome the 112 rejection. Applicant further provides arguments that will clearly establish that the claims as amended are patentable over the prior art references presented, either singly or in combination. Applicant points out and argues the key and patentable distinctions of applicant's invention, as embodied in the claims as amended, which clearly overcome the prior art presented.

Regarding the 112 rejection, the Examiner states that the language amended in the last Response; "interspersed" with and transmitted "simultaneously" were not disclosed in the specification.

In response applicant amended the claims to remove the word simultaneously. Applicant argues that, although the word "interspersed" may not be found in the specification, the meaning is well taught. Applicant believes anyone with skill in the art would understand that interspersed means that the data is placed at intervals in the higher priority data being transmitted. Applicant believes that as long as words have exact meanings in the claims, they don't have to be identical to the published words in the

specification.

Applicant's specification clearly recites that APPP driver 59 performs an additional function of slicing large data packets and sending reduced-sized packets via the satellite path. This added capability is to prevent a particular problem in transmission that can be caused by very large files. Assume, for example, that the satellite link is capable of sending data at 20 Mbps. A file of 80 Mb arrives at server 29, and the APPP driver determines the best route is the satellite path. Now assume that queue 67 is reserved for video, and to provide uninterrupted video at the user's PC, a packet must be sent every fraction of a second. If the 80 Mb file is queued in queue 69, when it is sent, it will tie up the satellite transmission for about four seconds. Assuming packets need to be sent during this interim from queue 67 for video (or any other type of real-time data stream), the four second transmission of a single packet will cause an interruption in the video stream at the user's end.

Packets of a size large enough to cause such an interruption as that described above are divided into packets small enough to be sent in between bursts from queue 67, so the larger file may be transmitted without disrupting the video stream or other high priority data being transmitted. Clearly the word "interspersed" is identical in meaning to the description given above. Therefore, applicant believes the 112 rejection should be removed.

Regarding claim 8 and 13, the Examiner has stated in his remarks that Liebowitz discloses applicant's broadband data transmission system comprising all of the limitations of applicant's claim, including control routines adapted for dividing large data entities into the lower priority queue into multiple smaller data entities of a size that may be transmitted interspersed with data entities from the high-priority queue without causing the rate of transmission of the high-priority entities to fall below the minimum rate (col. 5, lines 1-20 and 9-29).

Applicant herein amends claim 8 to recite that the minimum transmission rate is to insure that interruptions in transmission do not occur. Similar amendments are made to claim 13, adding that; "transmitting the divided portions of the second data entity interspersed with transmission of first data entities, without causing interruption in transmission of the first data entities.

Applicant points out that Liebowitz specifically teaches that (emphasis added): *FAD 66 is programmed to first examine the real time data queue 70. <u>The FAD 66 selects all real time fragments available until either the burst buffer 68 is full, or the real time data queue 70 has been depleted.</u> In the latter case, the FAD 66 fills the remaining buffer space in the payload 108 of the burst buffer 68 with non-real time fragments and Ethernet fragments in proportion to the CIRs of the respective virtual circuits and the Ethernet fragment data queue 74. For example, the virtual circuit having the highest CIR has the most fragments transferred from its non-real time data queue 72 to the burst buffer 68. This process is illustrated in FIG. 7 wherein all fragments (indicated generally at 80) derived from two frame relay frames 82 and 84 resulting from, for example, two voice calls are all transferred from the real time queue 70 to the burst buffer 68. The fragments 86 derived from exemplary Ethernet frames 88 and 90; however, are not all transferred into the burst buffer 68 because of insufficient space following the real time data from the queue 70.*

Applicant argues that clearly, Liebowitz teaches away from applicant's claimed invention because all real time data, or data that must be sent in a successive fashion at or above a minimum rate to insure no interruptions, is sent first until the queue is depleted or the buffer 68 is full. There is no interspersing of non-real time data in the transmission of real time data. It either comes after the last succession in the buffer, or after the entire real-time queue is depleted (col. 5).

Claim 13 is herein amended to include transmitting the divided portions of the second data entity interspersed with transmission of first data entities, without causing interruption in transmission of the first data entities. Liebowitz fails to disclose such a feature as argued above.

Applicant believes that claims 8 and 13, as amended, are patentable over the art of Liebowitz. Claims 9-10 and 14 are patentable on their own merits, or at least as depended from a patentable claim.
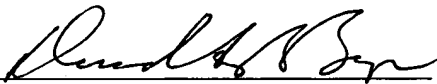
The Examiner has further rejected claims 8-10, 13 and 14 as being unpatentable over Yong in view of Clark. Applicant argues that Yong specifically teaches bandwidth sharing between high and low priority data sources using two different queuing disciplines, and control flow wherein priority queues are set up and assigned priority. The lower priory groups clearly are not given an opportunity to transmit data unless there are no packets in the high-priority group. Yong does not have the capability of dividing the large data entities into the lower prior queue, into smaller entities of the size that may be transmitted interspersed with the data of the high-priority queue.

Applicant further argues that claim 13, now includes the limitation wherein transmitting the divided portions of the second data entity interspersed with transmission of first data entities is done without causing interruption in transmission of the first data entities. The reference a Yong, as admitted by the Examiner in his remarks, does not specifically disclose broadband transmission or transmitting without causing the rate of transmission of the high-priority queue to fall below the minimum rate. The Examiner has relied on the reference of Clark to teach this deficiency. However, as argued by applicant above pertaining to the primary reference of Yong, the combination of Yong and Clark cannot possibly accomplish applicant's invention as claimed. Applicant therefore believes that claims 8 and 13, as amended and argued above, is patentable over the references provided, either singly or in combination.

Applicant believes in light of the claim amendments and arguments presented above, claims 8 and 13 are clearly patentable over the art. Depending claims 9, 10 and 14 are then patentable on their own merits, or at least as depended from patentable claim.

As all of the claims as amended and argued above are patentable over the references cited and applied, applicant respectfully requests reexamination and that the case be passed quickly to issue. If there are any extensions of time required beyond an extension specifically petitioned and paid with this response, such extensions are hereby requested. If there are any fees due beyond any fees paid by check with this response, authorization is given to deduct such fees from deposit account 50-0534.

Respectfully Submitted,
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